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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/493,192	01/28/2000	Toshimitsu Kaneko	0039-7541-2SRD	1924

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EXAMINER

AKHAVANNIK, HUSSEIN

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/493,192		KANEKO ET AL.	
	Examiner		Art Unit	
	Hussein Akhavannik		2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3,4,5,7</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Applicant is respectfully requested to provide copies of various papers cited on pages 28, 29, 48, 50, and 69 of the specification. If these reports are unavailable, then all references to them ought to be removed from the specification and replaced with only that material necessary for a complete understanding of the present invention.

Drawings

2. The drawings are objected to because:
- a. In figure 43, label S107 should be changed to S117 to correspond to page 99, line 26 of the specification.
 - b. In figure 2D, why does the 3rd frame have 4 representative points, while the other frames have 3 representative points.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Chakraborty et al (U.S. Patent No 6,462,754).

Referring to claim 1, which is representative of claims 8 and 15,

- i. Extracting position data of a representative point of an approximate figure approximating the region or a characteristic point of the region from the plurality of frames is explained by Chakraborty et al in column 9, line 62 to column 10, line 2. The rectangle, ellipse, circle, or polygons represent the approximate figure approximating a region. The coordinates extracted, such as the coordinates of a rectangle that defines a bounding box of a circle, are the representative points.

Chakraborty et al further explains the representative points to be stored for each approximate figure in column 13, lines 24-67.

ii. Determining a function approximating a trajectory which links corresponding representative points or corresponding characteristic points of successive frames, the function being represented by a parameter is explained by Chakraborty et al in column 8, lines 53-59. A spline (or linear if only concerned with two frames) function is determined to represent the trajectory between two points or vertices. The parameter representing the spline function is the start and end frames.

iii. Describing the parameter of the function as the region data is explained by Chakraborty et al in column 8, lines 53-59. The frame number is a parameter of the spline function, as the points or vertices for which a trajectory is calculated are each from a certain frame in the video. Chakraborty et al use the variable "t" in the spline function to represent time, which corresponds to a frame number in column 8, lines 26-39.

Referring to claim 2, which is representative of claims 9 and 16, describing information specifying a leading frame or a trailing frame of the plurality of frames as the region data is explained by Chakraborty et al in column 8, lines 53-59. The spline function between the points or vertices of the frames is calculated between start and end frame, which correspond to the leading frame and the trailing frame.

Referring to claim 3, which is representative of claims 10 and 17, describing information of the type of the approximate figure as the region data is explained by Chakraborty et al in

column 9, lines 37-48. The outline shapes, such as an ellipse, a circle, a rectangle, or a polygon are used to structures of interest in a frame. These structures are included in the video information (AIU) file as “type” as Chakraborty et al show in column 12, line 37 for “ellipse”.

Referring to claim 4, which is representative of claims 11 and 18, describing information of the number of the approximate figure as the region data is explained by Chakraborty et al in column 9, lines 49-54. Chakraborty et al explains that more than one approximate figure is possible and that these approximate figures are stored in the an AIU file of the video. Chakraborty et al further show the number of the approximate figure in column 12, line 37 as “Id”, which for the ellipse is “VAIU02”.

Referring to claim 5, which is representative of claims 12 and 19, the parameter data including position data of knots of the trajectory and information specifying the trajectory used together with position data of the knots of the trajectory is explained by Chakraborty et al in column 13, lines 24-32. Chakraborty et al explain that the position of the boundary points for the rectangle object being tracked in the video are given. For example, the top left coordinate of the rectangle is given as (254,161). The position data is provided in the AIU files in conjunction with the spline function defining the trajectory of the object, corresponding to claim 1.

Referring to claim 6, which is representative of claims 13 and 20,

- i. A plurality of the representative points or the characteristic points being included in a certain frame is explained by Chakraborty et al in column 9, lines 49-54, where Chakraborty et al explain the possibility of more than one approximate figure in each frame. Furthermore, Chakraborty et al explain that each approximate figure can has at least 2 representative points corresponding to

claim 1i. Therefore, a frame with multiple approximate objects will also include multiple representative points.

ii. The region data including information specifying correspondence among a plurality of the representative points or characteristic points in the certain frame and a plurality of the representative points or characteristic points in an adjacent frame is explained by Chakraborty et al in column 12, line 4 to column 13, line 5. Chakraborty et al show an AIU file which includes information about the frame number ("StartFrame" and "EndFrame"), the approximate figure ("Type"), and the representative points ("BoundryList"). Therefore, the region data (AIU of Chakraborty et al) includes information for each of the representative points in a frame and any of its succeeding frames.

Referring to claim 7, which is representative of claims 14 and 21, describing related information related to the object or information indicating a method of accessing the related information is explained by Chakraborty et al in column 12, lines 5-11. The AIU file contains the file name, description, and characteristics such as frame rate and start and end frame number to indicate information related to an object.

Referring to claim 22,

- i. Identification information of the object corresponds claim 1, where representative points are extracted to identify an object.
- ii. Information specifying a leading frame and a trailing frame of the plurality of frames corresponds to claim 2.

- iii. Information related to the object corresponds to claim 3, where the information is the type of approximate figure used to approximate the object.
- iv. Information indicating a method of accessing the related information corresponds to claim 7.
- v. Information of the number of the approximate figure corresponds to claim 4.
- vi. Approximate figure information which includes information of the type of the approximate figure corresponds to claim 3.
- vii. Number information of the representative point is explained by Chakraborty et al in the AIU file, in column 12, as the <Boundary> variable. Each <Boundary> variable corresponds to a representative point of the approximate figure. Therefore, multiple <Boundary> variables correspond to multiple representative points of an object.
- viii. Function data of the spline function approximating the trajectories of the representative point which includes knot information corresponds to claim 1.
- ix. Order information of the spline function is explained by Chakraborty et al in column 8, line 53 to column 9, line 5. Using a linear least squares estimate as the trajectory of representative points, the order of the spline function would be given as one.
- x. Coefficient information of the spline function is explained by Chakraborty et al in column 5, line 53 to column 9, line 5. The affine parameters of the

representative points would correspond to the coefficients of the linear least squares estimate of the trajectories of the representative points.

Referring to claim 23, this claim corresponds to claim 22 for characteristic points. The applicant defines characteristic points on page 69, lines 14-16 as any point, for example a corner of an object. Chakraborty et al explain that the representative points of a rectangle approximating figure could be the coordinates of the diagonals of the rectangle in column 9, lines 60-64. The diagonals correspond to the corners of the rectangle and therefore the representative point of Chakraborty et al may correspond to the characteristic points.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 8-10, and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Yokoyama (U.S. Patent No. 5,751,365).

Referring to claim 1, which is representative of claims 8 and 15,

i. Extracting position data of a representative point of an approximate figure approximating the region or a characteristic point of the region from the plurality of frames is explained by Yokoyama in column 9, lines 17-33. Representative points are extracted from triangular sections illustrated by Yokoyama in figure 3B. Yokoyama also illustrates representative points being extracted from other approximate figures in figures 3c to 3j.

- ii. Determining a function approximating a trajectory which links corresponding representative points or corresponding characteristic points of successive frames, the function being represented by a parameter is explained by Yokoyama in column 8, line 66 to column 9, line 13. The position of the representative points is expressed by the equation for $P(x,y)$.
- iii. Describing the parameter of the function as the region data is explained by Yokoyama in column 6, lines 43-60 and illustrated in figure 7. The parameter of the function would be the current frame, represented by $P(x,y)$, and the reference frame, represented by $P(x_0,y_0)$, of the equation in column 13, line 10-13.

Referring to claim 2, which is representative of claims 9 and 16, describing information specifying a leading frame or a trailing frame of the plurality of frames as the region data is explained by Yokoyama in column 6, lines 43-60 and illustrated in figure 7. The leading frame would correspond to the current frame and the trailing frame would correspond to the previous frame.

Referring to claim 3, which is representative of claims 10 and 17, describing information of the type of the approximate figure as the region data is illustrated by Yokoyama in figures 3a to 3j.

Priority

7. Applicant cannot rely upon the foreign priority papers to overcome the rejections based on Chakraborty et al because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. A translation of priority document Japanese Patent Publication No. 11-020387 is required to overcome the rejections. See MPEP § 201.15.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kondo et al (U.S. Patent No. 5,198,896) – To exhibit using an equation to calculate the movement vector of an image area between frames.

Wistendahl et al (U.S. Patent No. 5,708,845) – To exhibit tracking hot spots between frames of a movie using a function such as a line or curve.

Bozdagi et al (U.S. Patent No. 6,252,975) – To exhibit global motion prediction by estimating the motion trajectory of interest points in a series of images.

Nakaya (U.S. Patent No. 6,483,877) – To exhibit using motion vectors of representative points in a frame for coding and decoding images.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

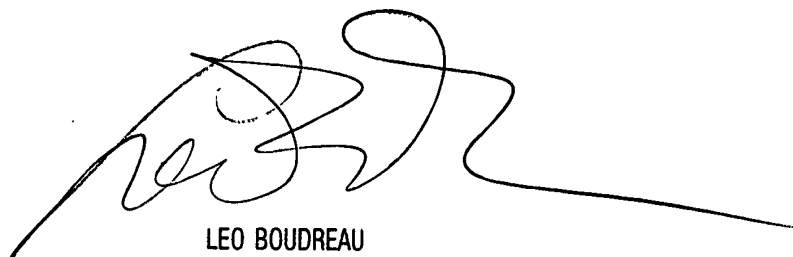
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Hussein Akhavannik
March 21, 2003

H.A.

A handwritten signature in black ink, appearing to read 'Leo Boudreau', with a long horizontal line extending to the right.

LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600